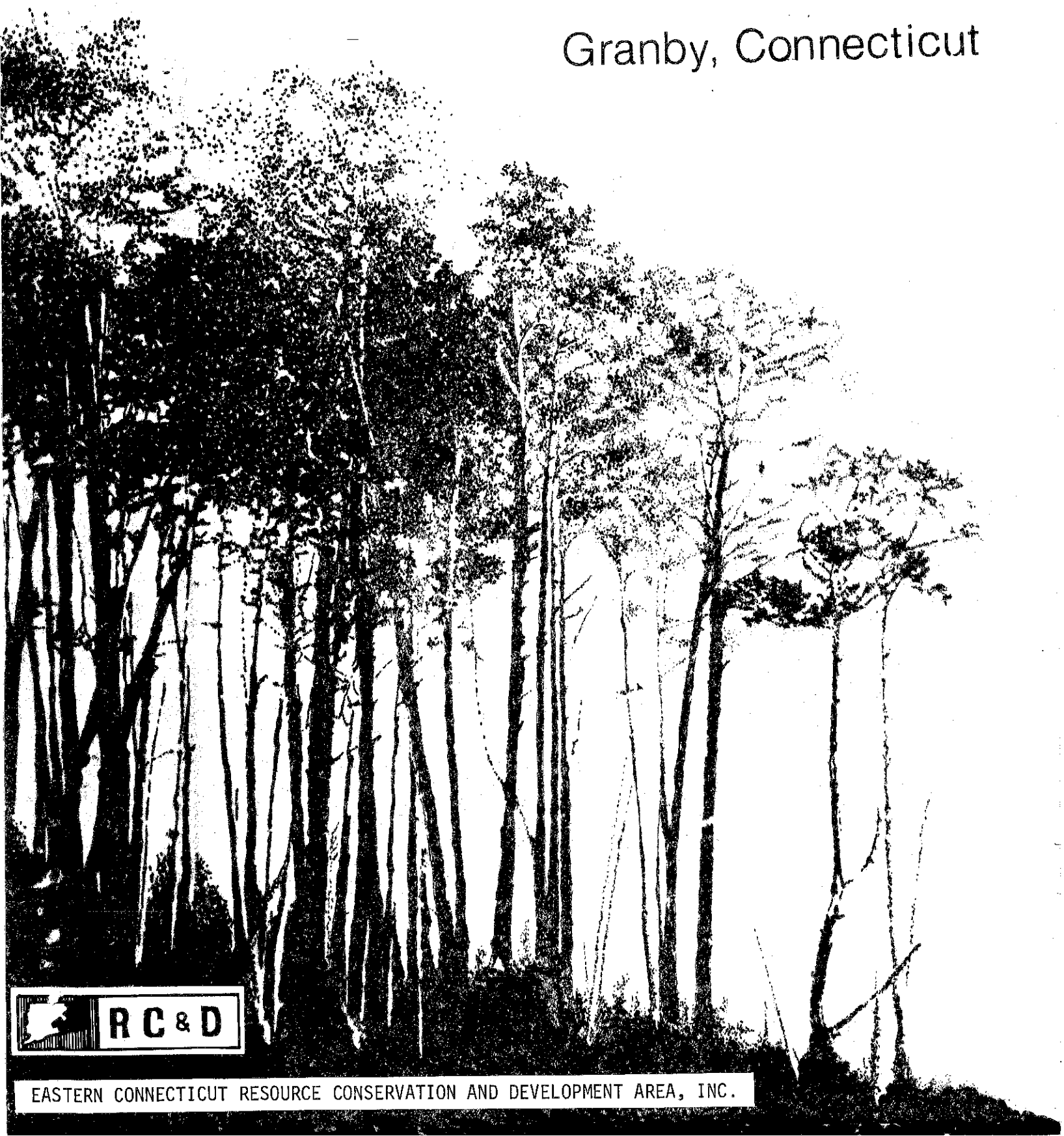
Environmental Review Team Report

Stonehedge

Granby, Connecticut



RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

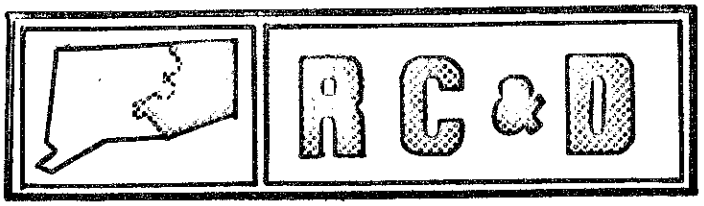
Environmental Review Team Report

on

Stonehedge

Granby, Connecticut

August 1979

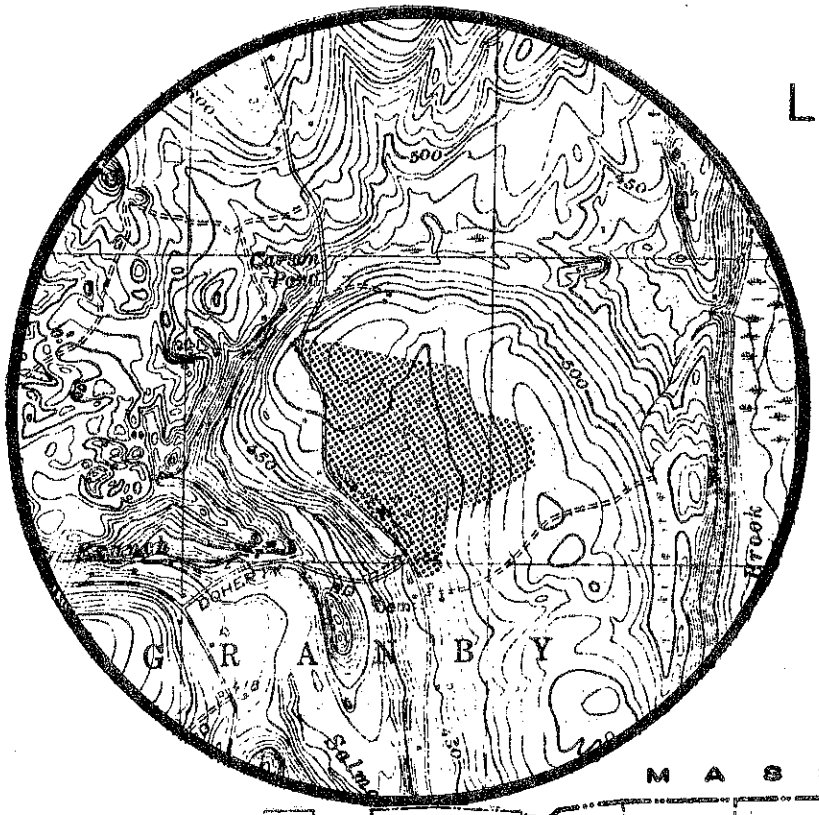


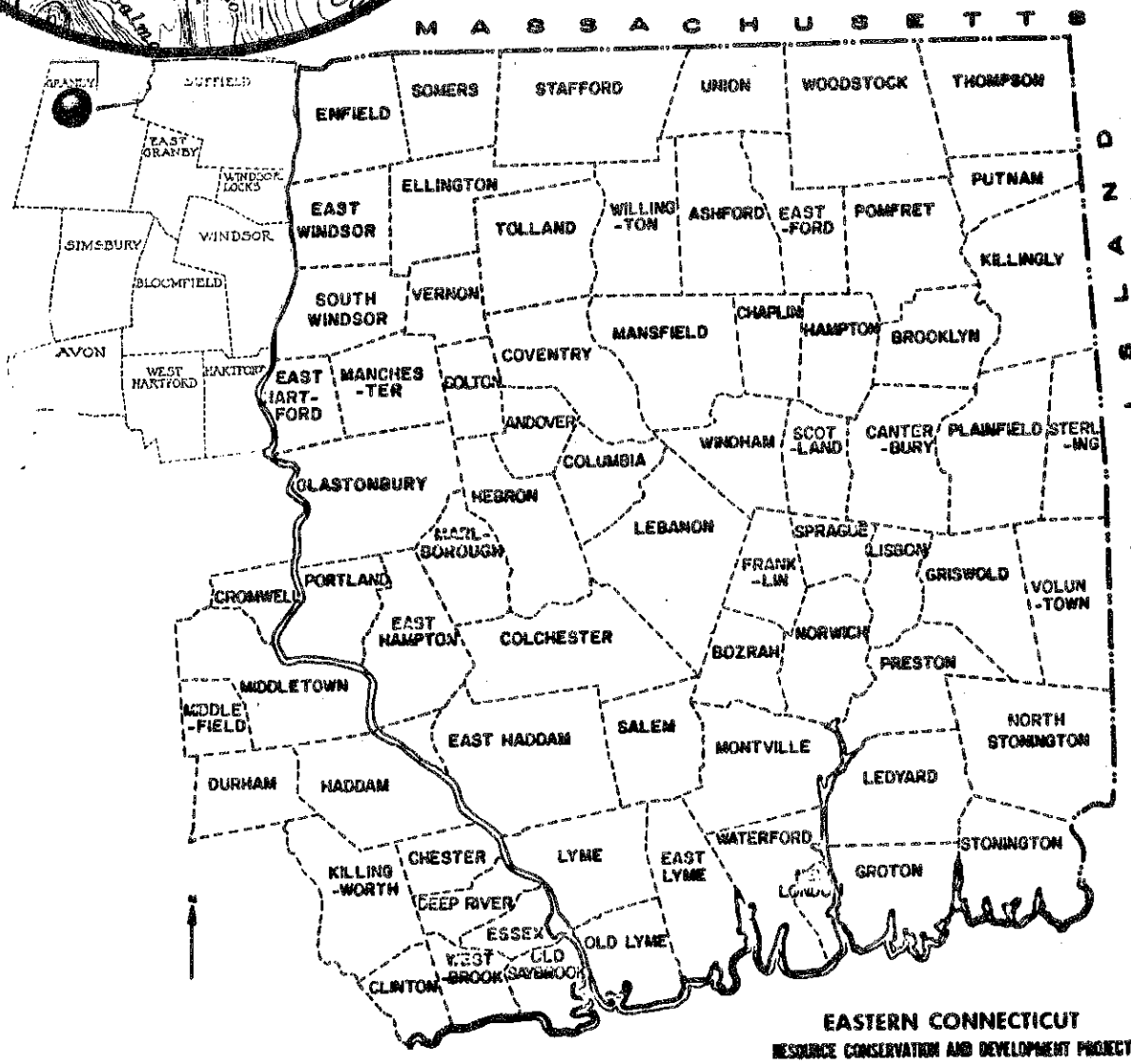
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

STONEHEDGE
GRANBY, CONNECTICUT





ENVIRONMENTAL REVIEW TEAM REPORT
ON
STONEHEDGE
GRANBY, CONNECTICUT

This report is an outgrowth of a request from the Granby Conservation Commission, to the Hartford County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS). Reproductions of the soil survey map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

The ERT that field-checked the site consisted of the following personnel: Michael Zizka, Geologist, State Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Steve Jackson, Wildlife Biologist, DEP; Al Horwath, Soil Conservationist, SCS; Tom Furgalack, Sanitarian, State Department of Health; Jeff Rabkin, Environmental Planner, Capitol Region Council of Governments, and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

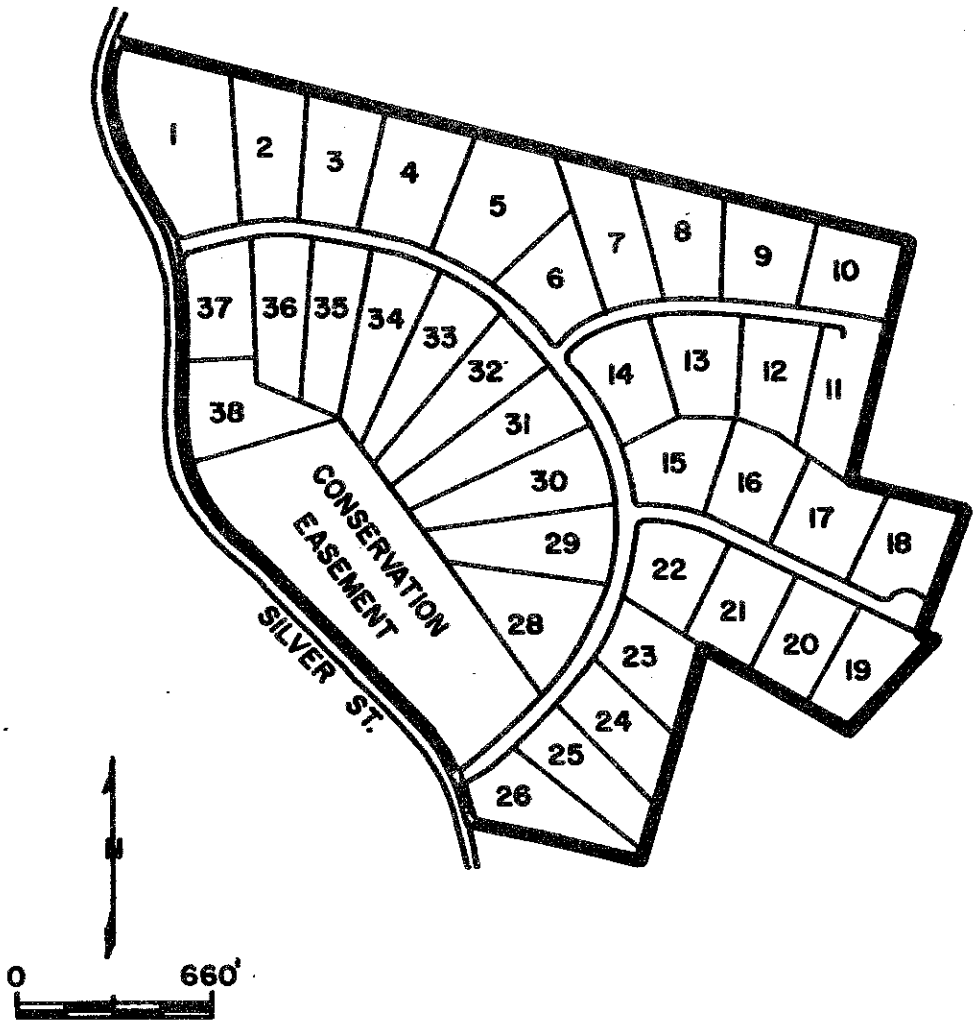
The Team met and field-checked the site on Tuesday, July 17, 1979. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Granby. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

The Eastern Connecticut RC&D Project Committee hopes you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

Preliminary Subdivision Plan



INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a proposal by the Silver Street Corporation for subdivision of a 100± acre parcel located on Silver Street in the Town of Granby. Preliminary plans, prepared by Ed Lally and Associates, shows the parcel divided into 38 lots of two or more acres each. These lots will be serviced by on site septic systems and on site wells. Single-family residences are planned for each lot. An interior loop road and two cul-de-sacs will provide access to the lots from Silver Street. A conservation easement has also been planned for the wetland and stream area on the property.

The site is located in one of Granby's most rural areas. Quality of wildlife habitat is high. The parcel is wooded with mixed hardwood species and a large area of dense hemlock. Several open fields are also incorporated in the total site. Topography is gently rolling and in some cases moderately steep. Salmon Brook, which runs to the west of this subdivision, is one of the Town's largest streams and subject to flash flooding.

The Team is concerned with the impact of this proposal on the natural resource base of the site. Soils on the site range from regulated wetland soils to excessively well-drained soils. Due to the erosive nature of some of these soils and their proximity to wetlands, a sediment and erosion control plan should be included in the final development proposal. Study subsequent to the field review indicates that an increase in runoff will result from this development. (See Hydrology section of this report.) Wells located on-site have the potential of producing water with high concentrations of iron and manganese, a condition which can be aleviated by proper filtering techniques.

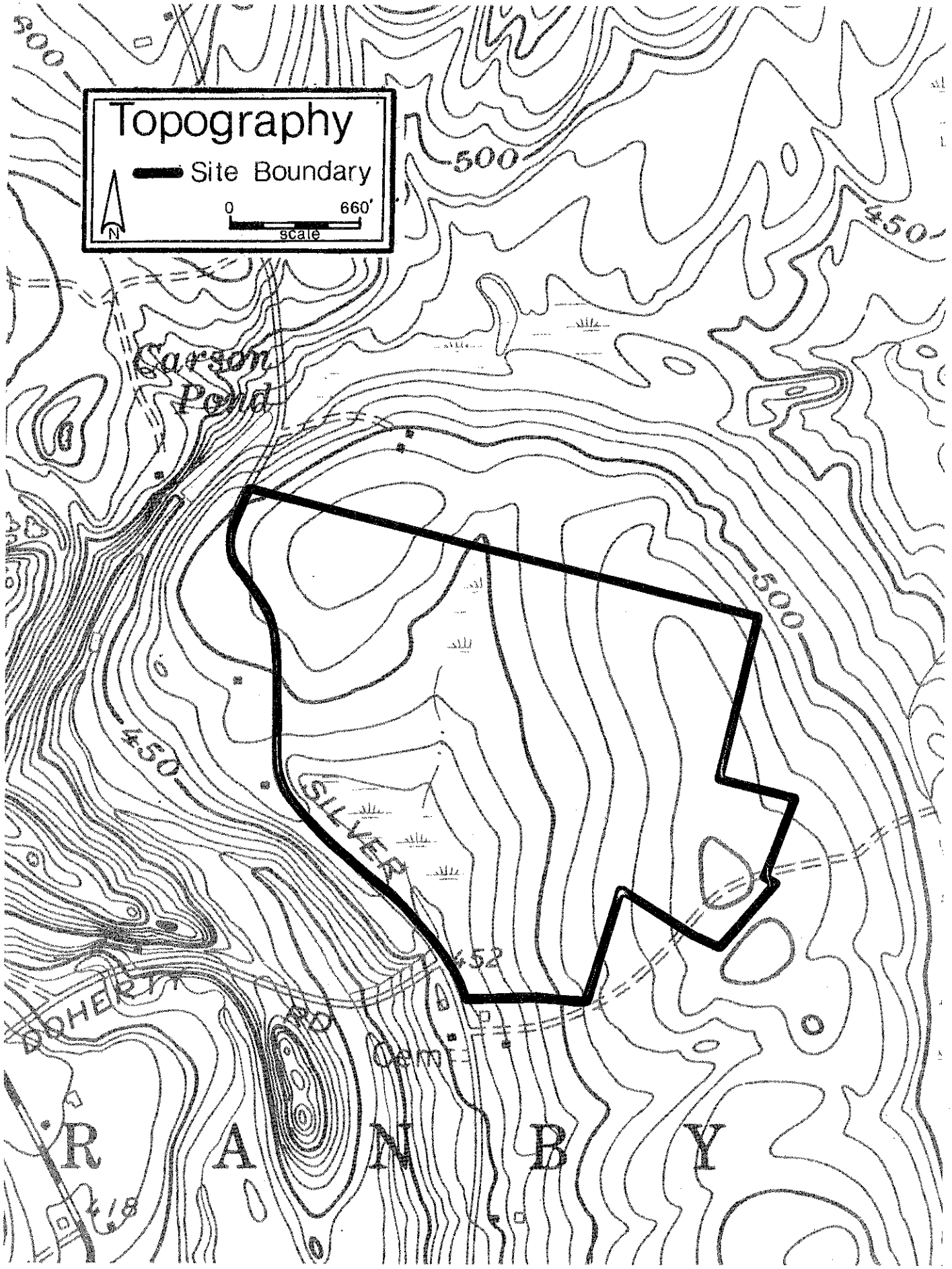
A sanitarian from the State Department of Health served as Team Sanitarian for this project. As only one deep test pit was provided per lot, the sanitarian feels that additional testing would be necessary to properly locate septic system reserve areas. Both acceptable location of the septic system and its reserve area, in relation to the location of the actual building site, should be shown on the final plans to indicate lot suitability for establishing these facilities.

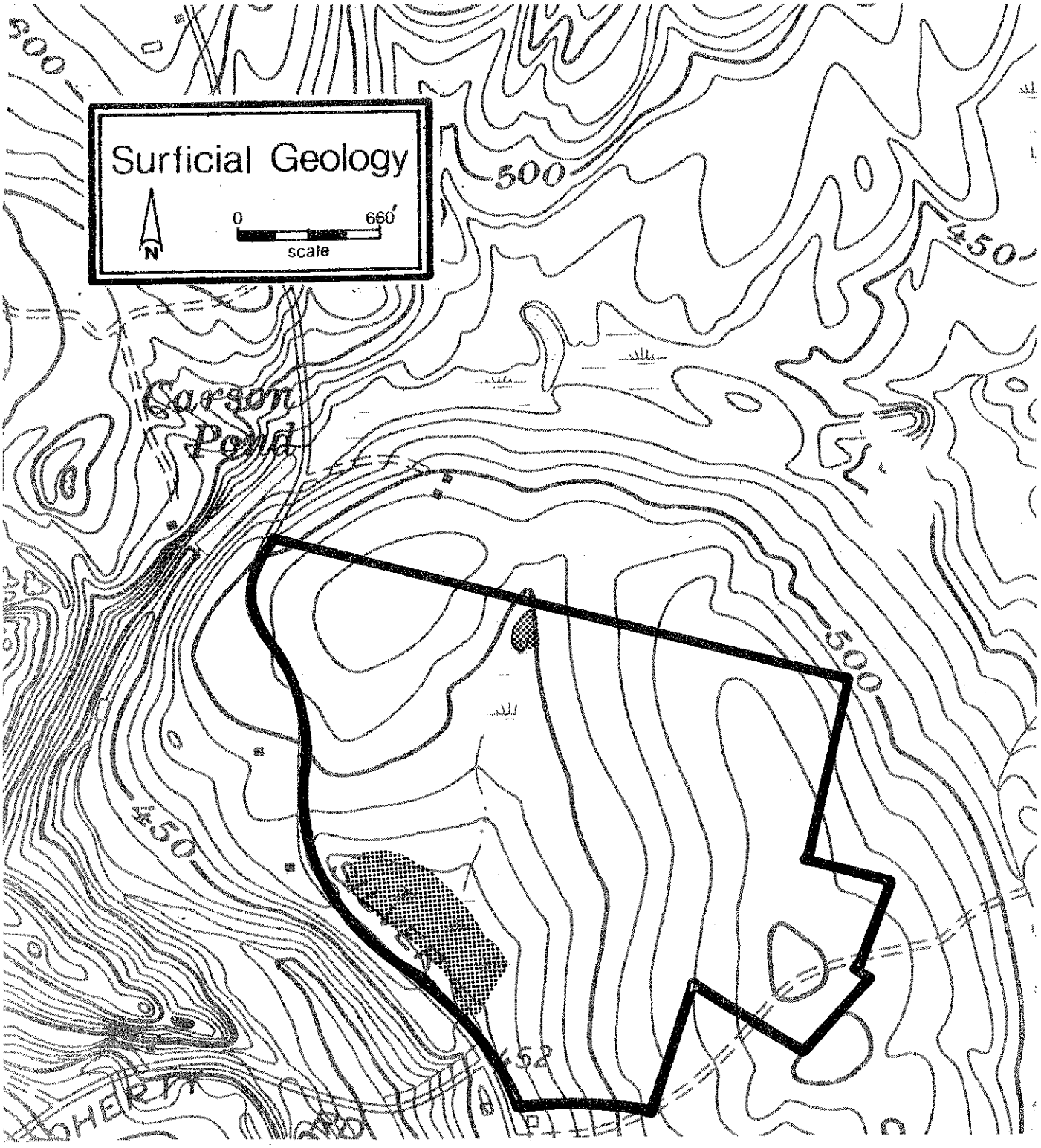
In the opinion of the Team Planner, the Silver Street Corporation proposal will not cause problems to the Town with traffic, road improvements and services.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The geology of the site consists essentially of crystalline bedrock overlain by unconsolidated deposits of glacial origin. Although no bedrock outcrops were observed on the site, the type of rock in the area may be determined from U.S. Geological Survey Map GQ-1170, "Bedrock Geologic Map of the Southwick Quadrangle, Massachusetts and Connecticut," by R.W. Schnabel (1974). The bedrock is identified as part of the Collinsville Formation, which consists of a layered sequence of amphibolites, granitic gneisses, schists, and granofelses. All of these rock types consist of tightly interlocking mineral grains; they differ mostly in degree of alignment of minerals and partly in mineral composition. Major mineral components are hornblende, quartz, plagioclase, biotite, muscovite, and garnet.

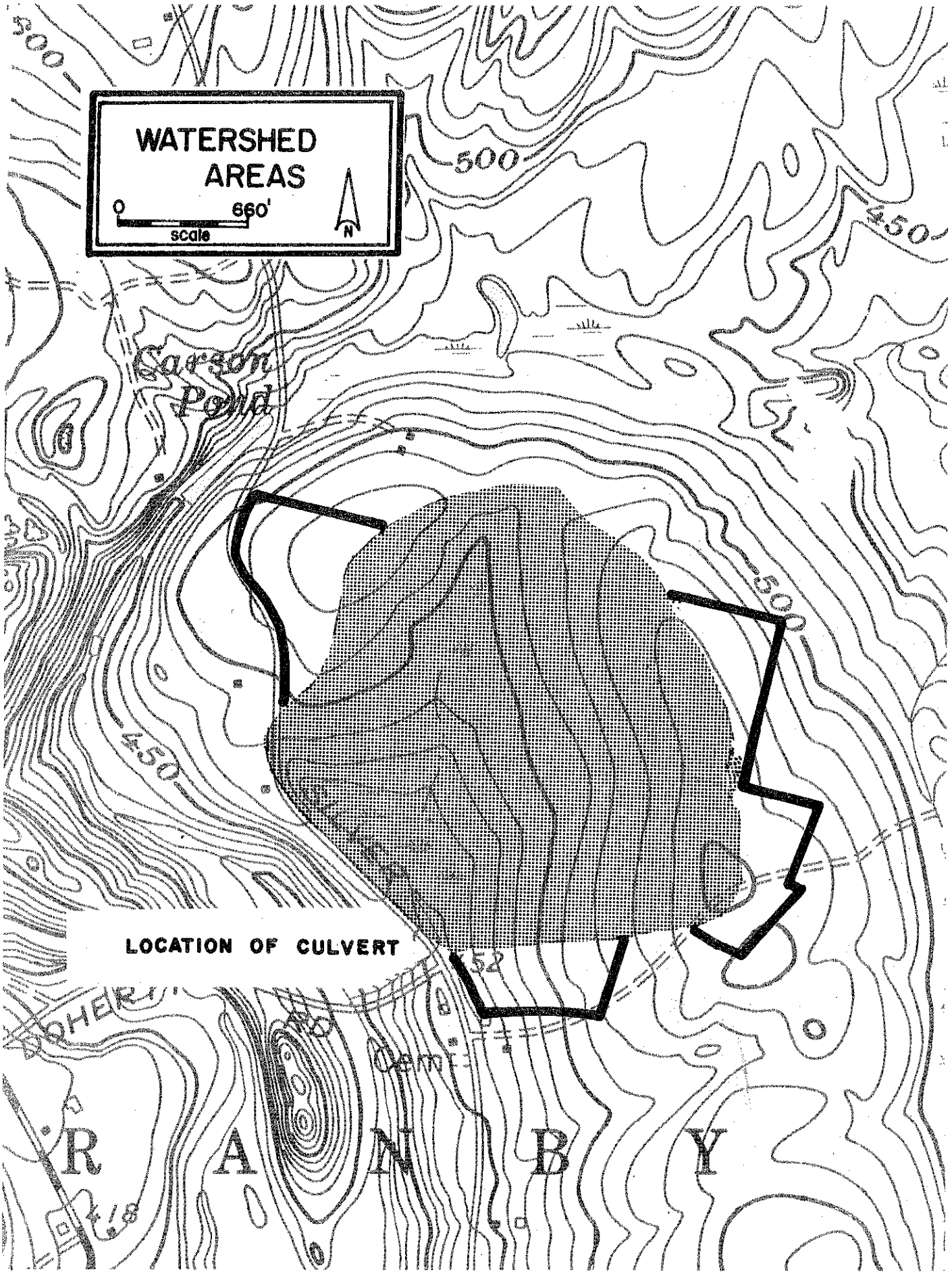

Topography
Site Boundary
0
660'
scale
N
500
450
Carson Pond
SILVER
452
RAINBY



LEGEND

Nonshaded part: Friable, gravelly glacial till, probably overlying silty, compact till.

Shaded part: Swamp deposits (Sand, silt, clay, and organic material at least one foot thick) overlying till.


WATERSHED
AREAS
0
660'
scale
N
Carson
Pond
500
450
LOCATION OF CULVERT
R
A
N
B
Y

The unconsolidated materials overlying the bedrock are classified as till. Till is a nonsorted, nonstratified collection of rock debris ranging in size from boulders to clay and in shape from round to angular to flat. Till was deposited directly from glacier ice without substantial reworking by meltwater. Most of the till seen at the surface of the site or in shallow excavations had a boney, friable texture. Test holes established on the site indicate the presence of a firm gravel, sandy gravel, or gravelly sand at depths generally between 3 feet and 7 feet. A well drilled on Silver Street across from the site penetrated 70 feet of till before reaching bedrock. It is likely that the gravelly, boney till is underlain by a compact, siltier till at a depth somewhere below 8 feet. Both types of till are generally present in thick till areas.

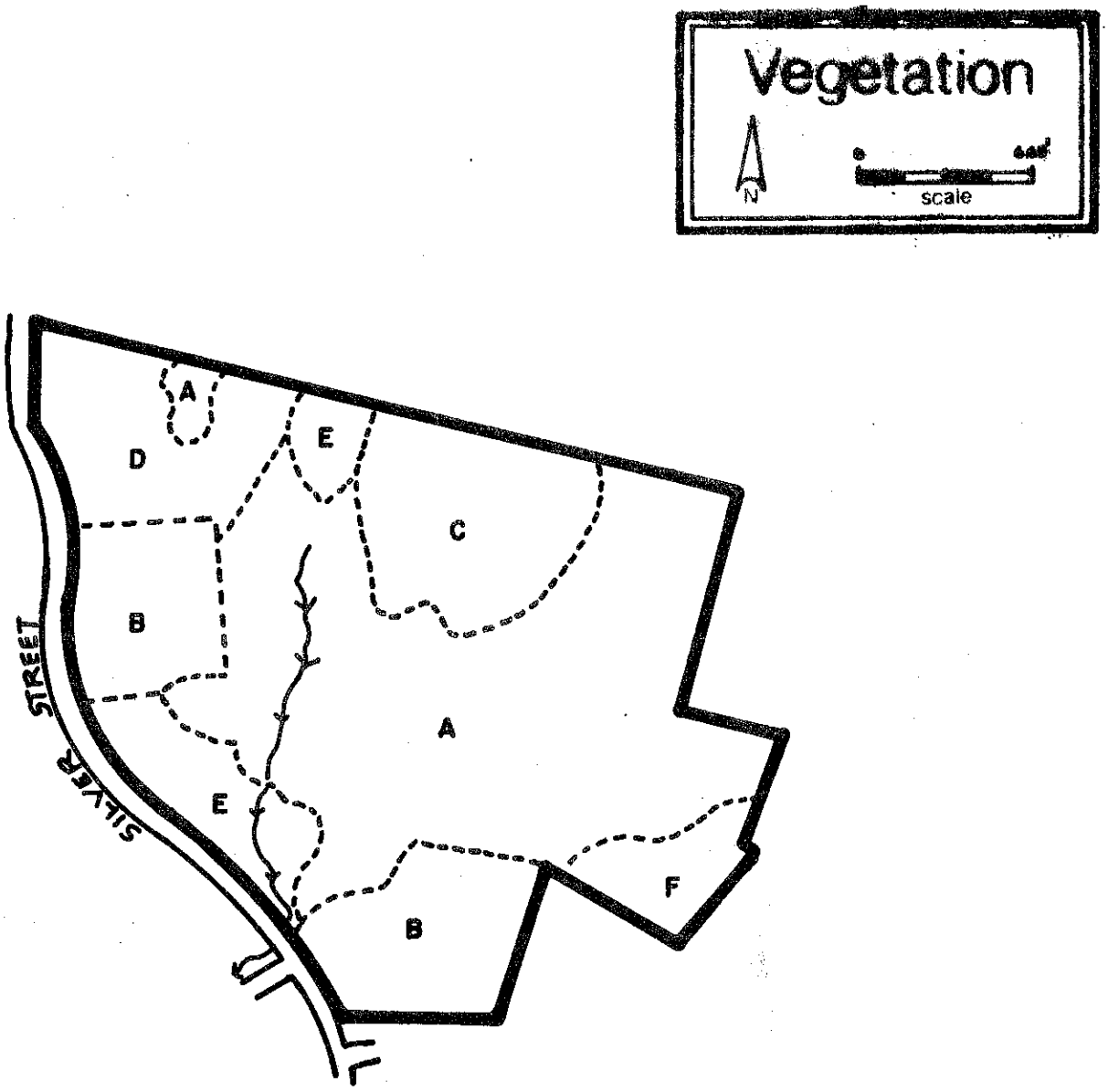
HYDROLOGY

Most runoff from the site flows to a swampy area near Silver Street and from there is channeled westward through a culvert toward a tributary of Salmon Brook. The drainage area for the culvert is shown in an accompanying illustration. Development of the site as planned would increase the volume of runoff shed from the site for storms of given magnitudes. These increases, in turn, would add to peak flows at the culvert and in downstream areas, unless runoff retention structures were utilized.

Estimated present and future peak flows at the culvert, based on a hydrologic-analysis procedure outlined in Technical Release No. 55 of the Soil Conservation Service, are listed in the accompanying table. Peak flows are given for storms having average periods of recurrence of 2 years, 10 years, 25 years, 50 years, and 100 years. Each storm would have a duration of 24 hours. All flows are given in cubic feet per second.

	2-Year Storm	10-Year Storm	25-Year Storm	50-Year Storm	100-Year Storm
Peak flows under present conditions	4 cfs	39 cfs	86 cfs	151 cfs	250 cfs
Peak flows following development as planned	11 cfs	69 cfs	141 cfs	235 cfs	374 cfs
Peak flow increases following development	175%	77%	64%	56%	50%

As the table indicates, percentage increases in peak flows are greatest for frequent, relatively low-intensity storms, but increases for the less frequent storms are still large. Consideration should be given to methods of temporary runoff retention that would prevent or at least reduce these increases. It is not known whether the present culvert on Silver Street is large enough to pass the post-development flood flows. If so, erosion and flooding problems that might be associated with the peak flow increases could be passed downstream. In this circumstance, the existing culvert under Doherty Road at the Salmon Brook tributary might also warrant examination. If the Silver Street culvert would restrict the bolstered peak flows, it should be determined whether the result would be flooding of Silver Street near the Doherty Road intersection or merely temporary ponding



LEGEND

- Road
- Property Boundary
- Vegetation Type Boundary
- Stream

VEGETATION TYPES*

STAND A Hemlock/pine, fully-stocked pole-size, 47 acres.

STAND B Old field, 16 acres.

STAND C Mixed hardwoods, fully-stocked pole to small sawlog-size, 13 acres.

STAND D Mixed hardwoods, fully-stocked, pole-size, 11 acres.

STAND E Hardwood swamp, over-stocked sapling-size, 9 acres.

STAND F Mixed hardwoods, over-stocked, sapling-size, 4 acres.

near the mouth of the site's major wetland. If the wetland can be used for natural runoff retention without inducing road flooding, it might even be possible to reduce the size of the culvert on Silver Street to restrict the potential flow rates. Fortunately, since the drainage area of the culvert is almost completely contained within the site, future development of nearby areas would not affect the culvert unless piped or rerouted drainage from such areas were allowed to be discharged on the site.

A possible alternative method of partial runoff control would be to establish a retention basin in the small wetland on lot 5, just north of the proposed road location. However, this alternative would interfere with the full use of the lot and could also be attractive to breeding insects. On the other hand, such a basin would reduce potential erosion problems in the swale south of the proposed road.

VEGETATION

The 100± acre tract proposed for development into the Silver Street Corporation Subdivision may be divided into six vegetation types (see vegetation type map and vegetation stand descriptions). Hemlock and white pine make up 47 acres, mixed hardwoods 28-acres, open fields 16-acres and wetland 9-acres. Preservation of the healthy vegetation and thoughtful placement of houses on lots will help to retain the rural atmosphere in this area.

Vegetation Stand Descriptions

Stand A. (Hemlock/pine.) Pole-size hemlock and eastern white pine are present with occasional sawlog-size hemlock, eastern white pine, white oak, hickory, and paper birch, in this 47-acre fully-stocked stand. For the most part an understory is lacking in this stand; however, there are localized patches of sapling-size gray birch, eastern white pine seedlings, and hemlock seedlings. In areas where sunlight reaches the forest floor patches of hay-scented fern have become established.

Stand B. (Open Field.) The fields on this property total 16-acres and are at present understocked with desirable tree species. Sapling-size eastern white pine, red maple, seedling size white ash, elm, and apple trees are among the tree species present. Staghorn sumac, smooth sumac, winged sumac, gray stemmed dogwood, spirea, speckled alder, sweet fern, and bayberry are the shrub species present. Grasses and weed species form the dominant vegetation type in this area. The following species were observed:

black raspberry	common St. John's wort
elderberry	virgin's-bower
milkweed	purple star grass
grape	goldenrod
black-eyed Susan	deptford pinks
daisy	Nuttall's lobelia
Timothy	deer tongue
common cinquefoil	hop clover
wild basil	common mullein
Virginia creeper	sensitive fern
poison ivy	bracken fern

Stand C. (Mixed Hardwoods.) This 13-acre fully-stocked stand is made up of healthy, high-quality pole- to small sawlog-size white oak, hickory, and red maple. Hardwood tree seedlings, scattered mountain laruel, white pine seedlings, and hemlock seedlings are present in this stand's understory. Grasses, huckleberry, and lowbush blueberry form the ground cover in this area.

Stand D. (Mixed hardwoods.) Pole-size and occasional sawlog-size red oak, hickory, black birch, paper birch, red maple, and hemlock are present in this 11-acre fully-stocked stand. The trees in this stand are starting to decline in health and vigor due to crowding. Hardwood tree seedlings, mountain laurel, maple-leaf viburnum, and highbush blueberry form a dense understory in this stand. Grasses and hay-scented fern are the dominant ground cover species present.

Stand E. (Hardwood Swamp.) Poor quality, sapling-size red maple in clumps on hummocks are present along with occasional sapling-size white ash in this 9-acre overstocked stand. The understory is made up of highbush blueberry, spice bush, swamp azalea, speckled alder, and poison sumac. Cinnamon fern, sphagnum moss, tussock sedge, and skunk cabbage form the ground cover in this stand.

Stand F. (Mixed Hardwoods.) This 4-acre overstocked stand is dominated by poor quality, sapling-size gray birch with occasional sapling-size red maple, red oak, and hickory. Seedling and sapling-size eastern white pine form the understory in this stand. Ground cover vegetation is primarily made up of club moss, Canada May flower, and sensitive fern.

Development of a subdivision in this area may alter the rural atmosphere that prevails in this part of the Town of Granby. To help preserve the rural atmosphere in this area, it would be desirable to preserve as many trees as possible. The larger, healthier trees throughout this property have value for aesthetic and shade purposes, while the smaller trees also have aesthetic value and will help to form a visual and sound barrier between houses.

The proper placement of houses in harmony with the natural lay of the land and the pre-existing vegetation will be critical, if preserving the rural flavor in this area is of primary importance.

The high water table and poor soil aeration in the hardwood swamp (Stand E) limit vegetative growth to species that are tolerant of excessive moisture conditions. Early crowding of the red maples, which are able to survive under these conditions, has resulted in poor-quality, slow-growing trees. Management of this stand for timber production is not feasible from an economic standpoint.

It should be recognized, with the development of this property, that trees are sensitive to mechanical injury and also to changes in soil aeration, moisture level, and physical composition within the entire area under their crowns. Such disturbances may cause a decline in tree health and vigor and even death within three to five years. Hemlock, which have shallow root systems, are also sensitive to increases in soil temperatures brought about by increased sunlight reaching the forest floor. This increase in exposure to sunlight and heat can cause a condition called sunscald which may cause death in sawlog-size hemlock. Care should be taken during construction to avoid mechanical injury to, and soil disturbances near, trees that are to be preserved, especially hemlock. Trees that are to be preserved close to construction sites should be temporarily but clearly marked so they can be avoided. High-quality, healthy trees on a house lot may enhance the value of that lot as much as twenty percent.

Raising the permanent water level in the hardwood swamp areas may cause the trees, shrubs, and herbaceous vegetation growing there to die. Not only will this lower the aesthetic value of the area, but also it will alter the ability of the wetland to hold and slowly discharge water; this may become critical during peak flow times. If the outflow of the wetland on the northern portion of this tract is crossed by the road, the proper placement of adequate culverts is essential.

Suggested Management Techniques

The trees in Stand D (mixed hardwoods) are becoming crowded; this condition is starting to cause a decline in tree health and vigor. A thinning in this stand, producing fuelwood as a product, will reduce competition between residual trees for space, light, water, and nutrients. Over time the trees remaining in this stand should respond by becoming healthier and more stable. Ideally this thinning should remove approximately one-third of the total volume. It should be focused on removing poor-quality trees, damaged trees, unhealthy trees, undesirable species such as red maple, and those trees that are directly competing with high-quality, desirable trees. Large, healthy, high-quality trees should be left in the residual stand.

Stand F (mixed hardwoods) is at this time overcrowded with poor-quality gray birch which are overtopping an understory of white pine. Eventually the gray birch will die and the longer lived white pine and red oak will become the main constituents of this stand. The condition of this stand could be improved by removing gray birch, which are competing with the white pine and scattered red oak. The white pine in this stand are young enough to respond positively to being released.

Many of the gray birch that should be removed could be utilized as fuelwood. Exceptionally healthy gray birch could be preserved for variety and aesthetics, even though these benefits will most likely be short-term.

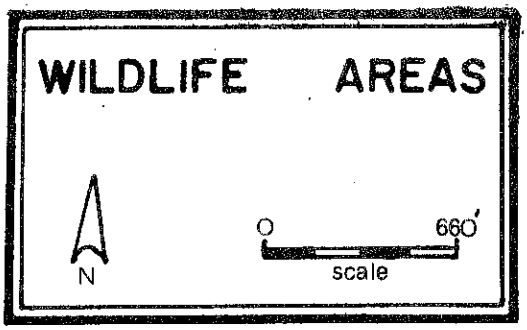
Both of these thinnings could be implemented at the same time, before construction takes place. This would help to assure a healthy, stable forest prior to actual development. Under these circumstances a state-employed public service forester or a consulting forester could be contacted for further assistance.

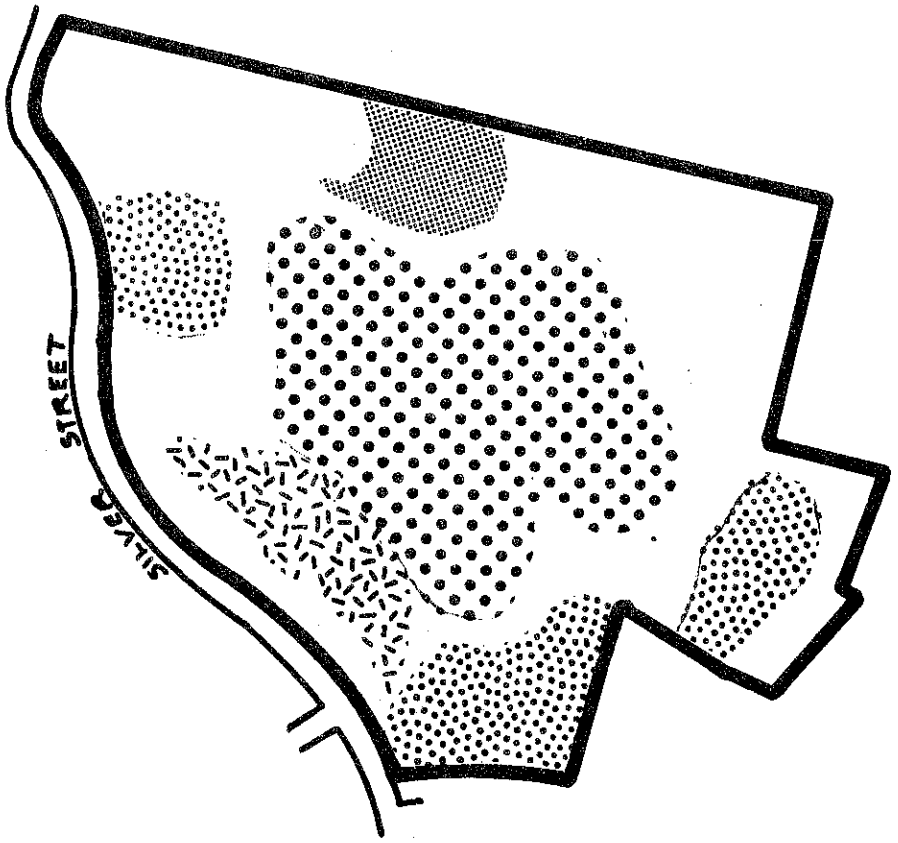
House lots could be thinned on an individual basis by lot owners as an alternate measure.

WILDLIFE

The present value of the site is high for upland wildlife, which include deer, squirrel, ruffed grouse, woodcock, raccoon, and woodchuck. The area has a great variety of habitats, making it valuable for many different song birds and small mammals. The site has good potential for the wild turkey recently introduced to the area.

Should this proposed development be constructed, it will create conflicts with wildlife. Residents unaccustomed to wildlife in the area will have to adjust to it. Unfortunately most residents of this type of housing are intolerant of damages caused by wildlife. Deer will get into shrubbery and gardens. Raccoons will get into garbage cans. Dogs and cats will kill wildlife. In general, wildlife populations will be displaced due to human presence, change of habitat, and human intol-





LEGEND

- High use areas (good food source)*
- Hemlock (good winter cover)
- White oak (valuable food source)
- Wetland area (water and food source)

* Contains woodcock, juniper, dogwood, sumac (staghorn and dwarf), cedar, grape.

erance of wildlife problems. Planning the type of shrubbery, fencing gardens, protecting garbage cans, etc., can reduce these problems. On a much larger scale, impact on wildlife can be reduced by cluster housing, leaving the majority of the area undeveloped for wildlife. This would require substantial redesign of the development and town housing regulations. Two-acre zoning distributes people throughout wildlife habitat, influencing all of it. Cluster housing with the same number of houses influences a smaller area. Open space in the form of wild areas, managed as wood lots or wildlife areas, could be beneficial to wildlife. A wood lot of this kind could also provide fuel to ease energy problems.

The Conservation Easement Section is a wetland area potentially vulnerable to major changes in the water table. It is not a particularly unique area but alterations should be limited. This area is a potential beaver pond location with all the potential problems that go along with it. Beavers creating a pond, killing trees, and blocking the road culvert could have a positive impact on wildlife in the area over a long term basis.

The valuable wildlife areas map points out sections of the property which should be avoided by substantial development impact if at all possible. Open fields or fields reverting to forest are high-use areas and good sources of food. Dense hemlock stands provide cover from severe winter conditions for deer. White oak provides a valuable food source. Wetlands in the Conservation Easement provide good sources for water and food.

SOILS

A detailed soils map of this site is included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types of the site. The soil limitation chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development many soils and sites with difficult problems can be used. The soils map, with the publication Soil Survey: Hartford County, Connecticut, can aid in the identification and interpretation of soils and their uses on this site. Know Your Land: Natural Soil Groups For Connecticut can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

Soils typical of the Silver Street site include the Leicester series, the Sutton series and the Gloucester series. The Leicester series is a regulated wetland soil under Public Act 155. Sutton soils limit development by their seasonal high water table. In unprotected areas, Gloucester soils are subject to erosion.

The Gloucester series consists of somewhat excessively drained soils on uplands. They formed in glacial till derived mainly from granite and gneiss. Typically, they have a very stony or extremely stony, very dark grayish brown sandy loam surface layer 4 inches thick. The subsoil from 4 to 13 inches is dark yellowish brown, gravelly sandy loam and from 13 to 27 inches is light yellowish brown,

gravelly loamy sand. The substratum, from 27 to 48 inches, is light yellowish brown, very gravelly, loamy coarse sand. Slopes range from 0 to 50%.

The Leicester series consists of deep, poorly and somewhat poorly drained soils on uplands. They formed in glacial till. Typically, these soils in a wooded area have a black fine sandy loam surface layer 6 inches thick. The mottled subsoil from 6 to 23 inches is grayish-brown, light brownish-gray and pale brown, fine sandy loam. The mottled substratum from 23 to 60 inches is dark yellowish-brown, fine sandy loam. Slopes range from 0 to 8%.

The Sutton series consists of deep, moderately well-drained soils on uplands. They formed in glacial till. Typically these soils have a very dark grayish brown, fine sandy loam surface layer 6 inches thick. The subsoil layers from 6 to 20 inches are dark brown and yellowish brown, fine sandy loam with mottles below 12 inches. The mottled substratum from 28 to 36 inches is brown, fine sandy loam and from 36 to 60 inches is light olive brown, gravelly sandy loam. Slopes range from 0 to 25%.

Erosion and sediment control measures should be included in the final development plans. Connecticut's Sediment and Erosion Control Handbook will provide both the developer and the Town with technical information for developing a plan. In addition the Hartford County SCS is available to review these plans for their effectiveness.

FOUNDATION/GRADED CONDITIONS

Cuts and fills along the roads should be finished at 2:1 slopes. Plans should specify a seed mix to use for stabilizing the slopes. Slopes should be vegetated as soon as possible after grading.

The main road at lot #26 will have to be constructed on a steep area located above the brook. The use of hay bales below the road to protect the brook from sedimentation is recommended.

Utilities should be installed as soon as possible after road construction. Pavement of the road surface soon after construction will limit the length of time the raw road surfaces are exposed to soil erosion.

The planned road will cross a stream and high water table area near lot #5 and #33. This area is critical because sediment here will have direct access to the stream. The culvert and fill placed here for a road should be immediately stabilized. Riprap can be used around the culvert. Side slopes should be well vegetated.

Hay bales can be used at catch basins to prevent sediment from entering the storm drainage system.

House sites should be seeded as soon as possible after final grading is complete. A permanent seed mix should be specified on the plans. If large trees are to be retained around house sites, the seed mix should be adapted to shady conditions. If it is known that a lot will be graded too late for permanent vegetation, temporary vegetation should be seeded no later than October 15. Temporary seed mixes should also be specified on the plans.

The brook which flows from this subdivision is quite steep. Increases in peak runoff could cause damage here in the form of streambank erosion.

The wetland along Silver Street and the wet area by lot #5 should be considered as stormwater retention areas. It is possible that they presently have the capacity to store increases in storm water runoff due to the development. Small, more frequent storms should be considered in the design.

WATER SUPPLY

Since no major sand and gravel aquifers exist on the site, bedrock would be the likeliest water supply source. Yields from bedrock depend largely upon the size and number of the water-bearing fractures encountered by a well. The distribution of fractures within most bedrock types is highly variable; hence, a relatively high-yielding well may be located only a few hundred feet from an equally deep but nonproductive well. Nevertheless, most bedrock wells drilled 150-200 feet into the rock are capable of supplying at least 3 gallons per minute of groundwater, an amount considered adequate for an average family. A well drilled through 70 feet of till and 215 feet of bedrock across the street from the site had a reported yield of 8 gpm. If yields of at least 1 gpm are not achieved within the first 150 feet of bedrock on any lot, it probably would be more practical to drill in a new location rather than to continue drilling in the original hole.

Because the rock formation that wells within the subdivision would penetrate is variable in mineral composition, the quality of the groundwater may depend on which layers contain the water-bearing fractures. Some possibility exists of excessive iron or manganese concentrations, but filtration may alleviate such problems.

WASTE DISPOSAL

Assuming a direct correlation between lot numbers and test pit numbers the following gneeral breakdown can be made based on the available information:

Lots #2, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 21, 22, 24, 29, and 30 (with some reservation concerning lots #2 and 21) appear to be suitable for purposes of subsurface sewage disposal in the area tested.

Lots #1, 3, 4, 5, 6, 20, 23, 25, 26, 27, 28, 31, 32, 33, and 34 (#32 is somewhat questionable, #20 is based on field notes provided by the Farmington Valley Health District) have indication of ground water levels near the surface, a condition requiring engineered designs. No soil percolation test data accompanied the soils profile information. Therefore, it is somewhat difficult to draw any final conclusions.

It should be noted that for the most part only one observation pit per lot appears to have been provided. The State Department of Health generally recommends a minimum of two test holes per lot in order to establish suitability of both the proposed primary and reserve area. Therefore, additional testing seems appropriate.

Soil profile data sheets indicate that the testing was conducted in the month of May, 1979.

Mention had been made of the possibility of installing curtain drains for the purpose of lowering the ground water table in the area of certain systems. If drains are to be utilized in order to allow for the installation of the system deeper in the ground these drains must be demonstrated to be effective for this purpose during the wet season (satisfactory demonstration is a lowering of ground water to 2' below the proposed system as determined in the system location). However, if the system is to be placed in fill 18" above ground water, as required, and the drains are to be installed as an added margin of safety, then these drains need not be demonstrated to be effective.

Prior to subdivision approval of these lots, it should be shown that a suitable areas exist for the placement of both primary and reserve areas for subsurface sewage disposal systems and water supply wells in accordance with the Public Health Code of the State of Connecticut. In the case of those lots with ground water problems this will require greater detail, i.e., engineered designs. Those lots found to be suitable during the site investigation (soil profile and percolation test data) may be handled by merely noting suitable geographic locations on the subdivision plans.

It should be stressed that regardless of the detail required, whether it be complete engineered design or mere designation of location, the intent is to demonstrate the suitability of the lot based on the proposed location of various components. This should not be construed to mean that other suitable areas of the lot are not acceptable for the purpose of subsurface sewage disposal. The intent of designating a suitable area for the subsurface sewage disposal system and well should not be considered as so inflexible as to exclude other locations on the lot. On the contrary, if at a later date a decision is made to change the location of the house, septic system, well, etc., and it is demonstrated that the change will provide for compliance with all applicable requirements of law, then certainly the change should be allowed.

The local health department (in this case the Farmington Valley Health District) should be consulted to obtain their input (i.e., approval of proposed subsurface sewage disposal systems and well locations) as regards the proposed subdivision.

PLANNING CONCERNS

The environmental carrying capacity of the site appears to be adequate to support the subdivision if certain engineering precautions are taken. Erosion and sediment control measures (e.g., as set forth in Erosion and Sediment Control Handbook for Connecticut, USDA, SCS, 1976) should be considered throughout the site, especially with regard to the protection of steep slopes, areas of seasonally high water tables and wetlands.

Drainage that maximizes percolation is recommended. If storm water is to be discharged to a wetland or watercourse, it is suggested that calculations (based on the 25 year peak storm water discharge) demonstrate that said receiving body can safely accept such a discharge.

It is recommended that homes be sited so as to maximize green areas and corri-

dors. Passive and active energy conservation techniques are suggested for all homes.

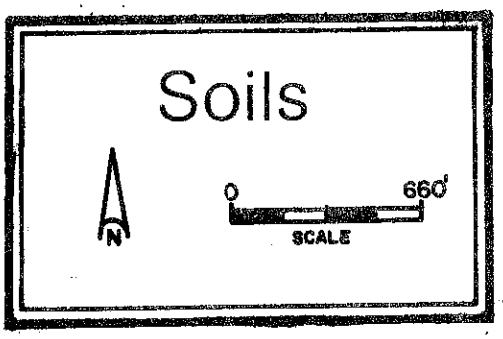
As planned, the Silver Street subdivision is in accordance with the Regional Plan of Development and with Granby's Town Plan of Development. It is not apparent that the Silver Street subdivision will put a strain on the capacity of local services.

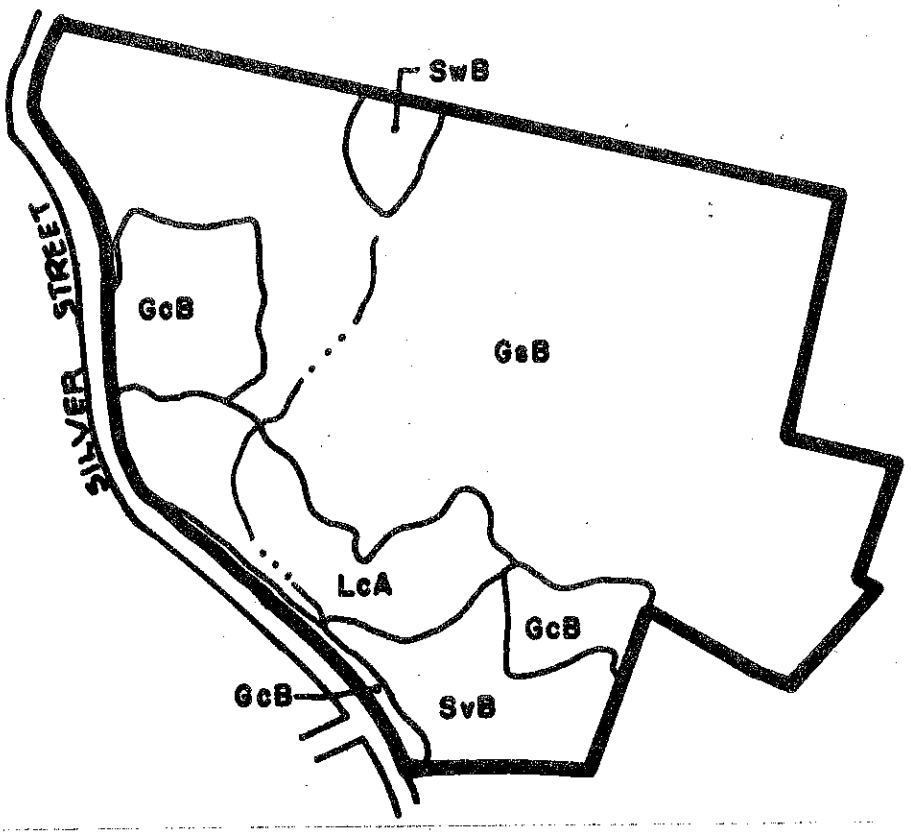
TRAFFIC CONCERNS

It is estimated that the Silver Street subdivision will generate approximately 300 trips per day. Silver Street can support this additional traffic. The only arterial route in the area eligible for federal funds is Silver Street. No extensive reconstruction is planned for the segment of Silver Street in the vicinity of the planned subdivision, but spot improvements (e.g., drainage system, resurfacing) will be eligible for federal funding. Upon passing the carpool lot at the center of Town, it appeared that the lot was full. The Town may wish to consider increasing its carpool facilities.

Frederick Hesketh and Associates has prepared an analysis of existing roadway conditions and projected traffic generated from the proposed Silver Street Corporation Subdivision, also considering the potential for future development along Silver Street. In their opinion and in the opinion of the Team Planner, the projected traffic load could be accepted on the roadway network without difficulty. The resultant hourly and daily traffic loads will remain substantially below the capacity of the roadway for safe accommodation.

Appendix





LEGEND

Symbol	Soil Name	Slope
GcB	Gloucester fine sandy loam	3-8%
GsB	Gloucester stony fine sandy loam	3-8%
LcA	Leicester loam	0-3%
SvB	Sutton loam	0-3%
SwB	Sutton stony loam	3-8%

STONEHEDGE
GRANBY, CONNECTICUT

SOILS & MAP SYMBOLS	HOUSE & SEPTIC SITES AFFECTED	MAJOR PROBLEMS	RECOMMENDATIONS
WETLANDS LcA Stream	28, 33(stream)	Stream and associated wetlands require special considerations when used. Filling reduces flood storage capacity. Vulnerable to sedimentations.	1. Protect streams from sedimentation 2. Cross with properly sized culverts 3. Recommend that no encroachment by filling take place. 4. Erosion and sediment control necessary on rest of property.
SEASONAL HIGH WATER TABLE SvB, SwB (moderate slopes)	5, 6, 25, 26 & 27	-High seasonal water table makes the establishment of workable septic systems very difficult -Seepage into basements very probable. -Roads/driveways subject to frost action. -Soil erodible on sloped areas.	1. Curtain/footing drains suggested. 2. Road drainage suggested 3. Take percolation tests in the spring wet season preferably after curtain drains are installed. 4. Erosion and sediment contol plan suggested.
DEEP, WELL DRAINED SOILS (Moderate slopes) GsB, GcB	1-4, 7-24, 29-38	-Soils erodible on sloped areas. -Small seep areas observed in the field.	1. Erosion and sediment control plan necessary to protect streams and wetlands below. (The pond at the junction of Silver Street and Route 189 already has severe sediment problems.) 2. Curtain/footing drains suggested where seep areas occur.

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

About the Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.